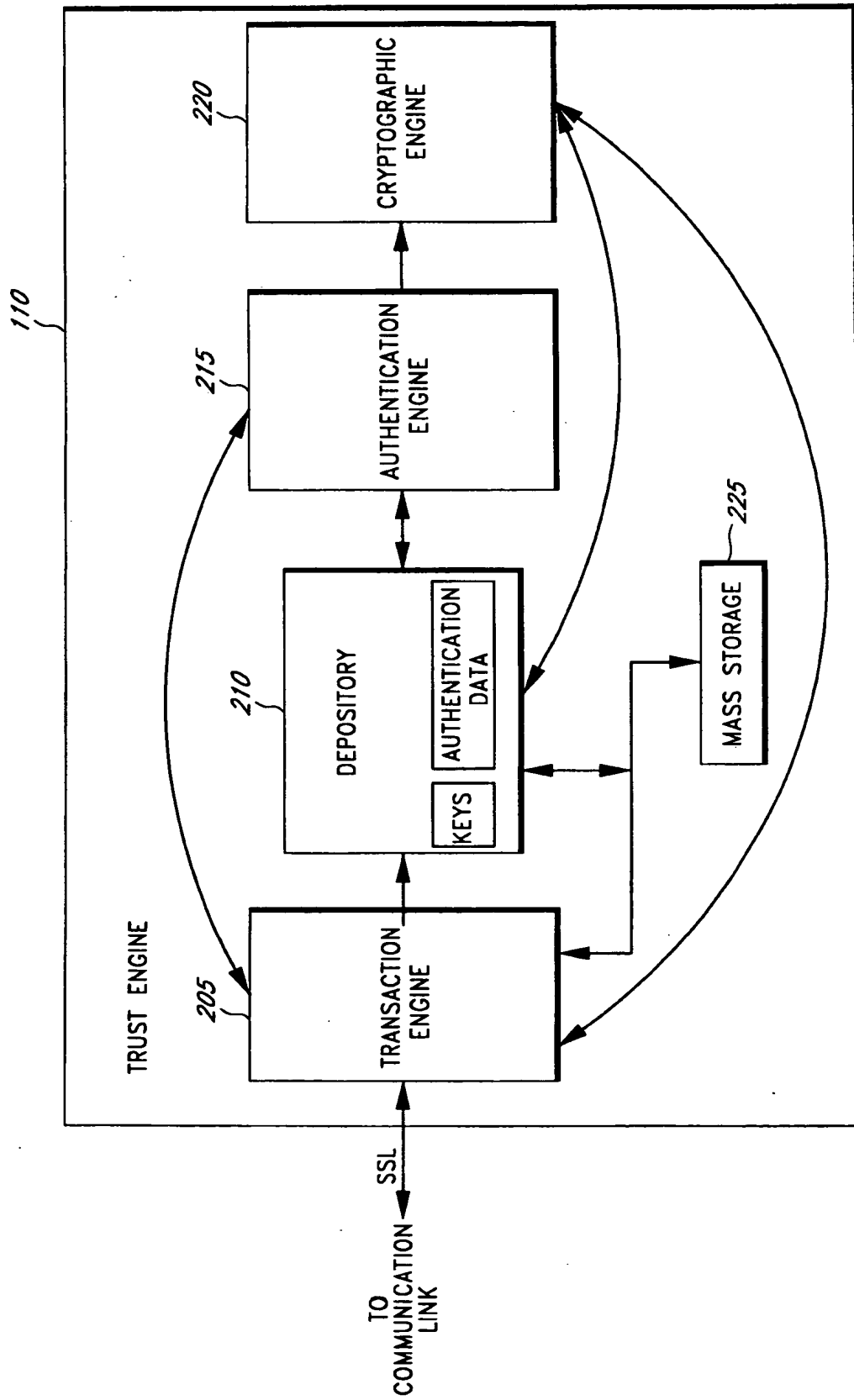


FIG. 1

**FIG. 2**

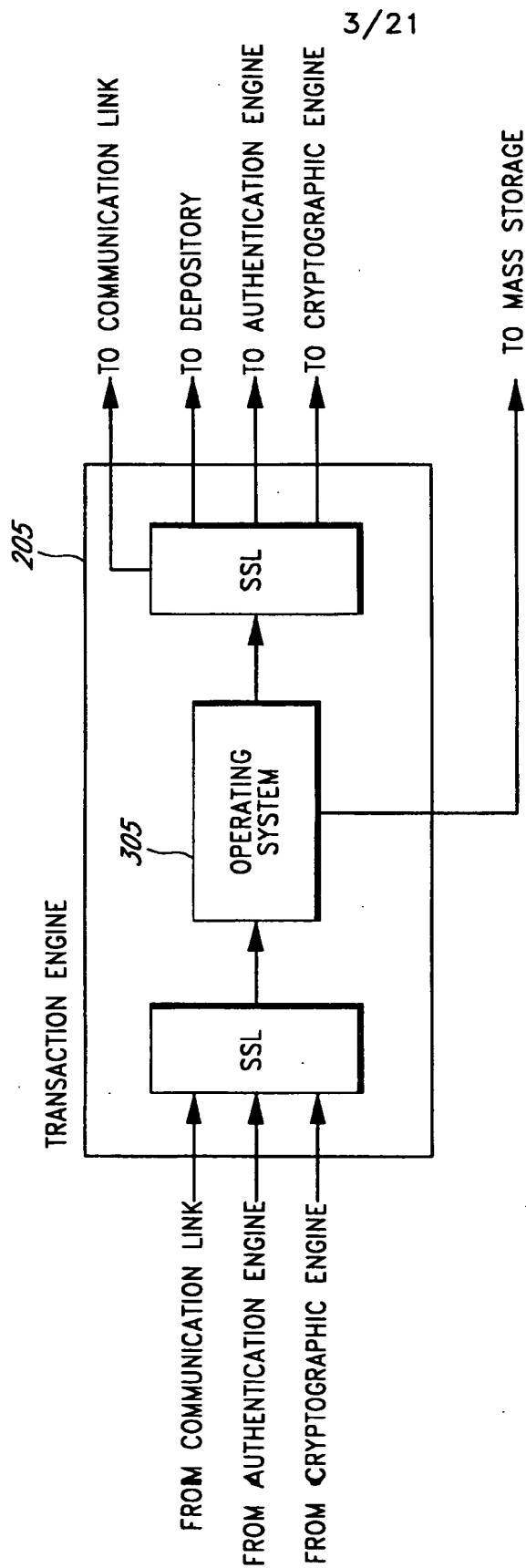
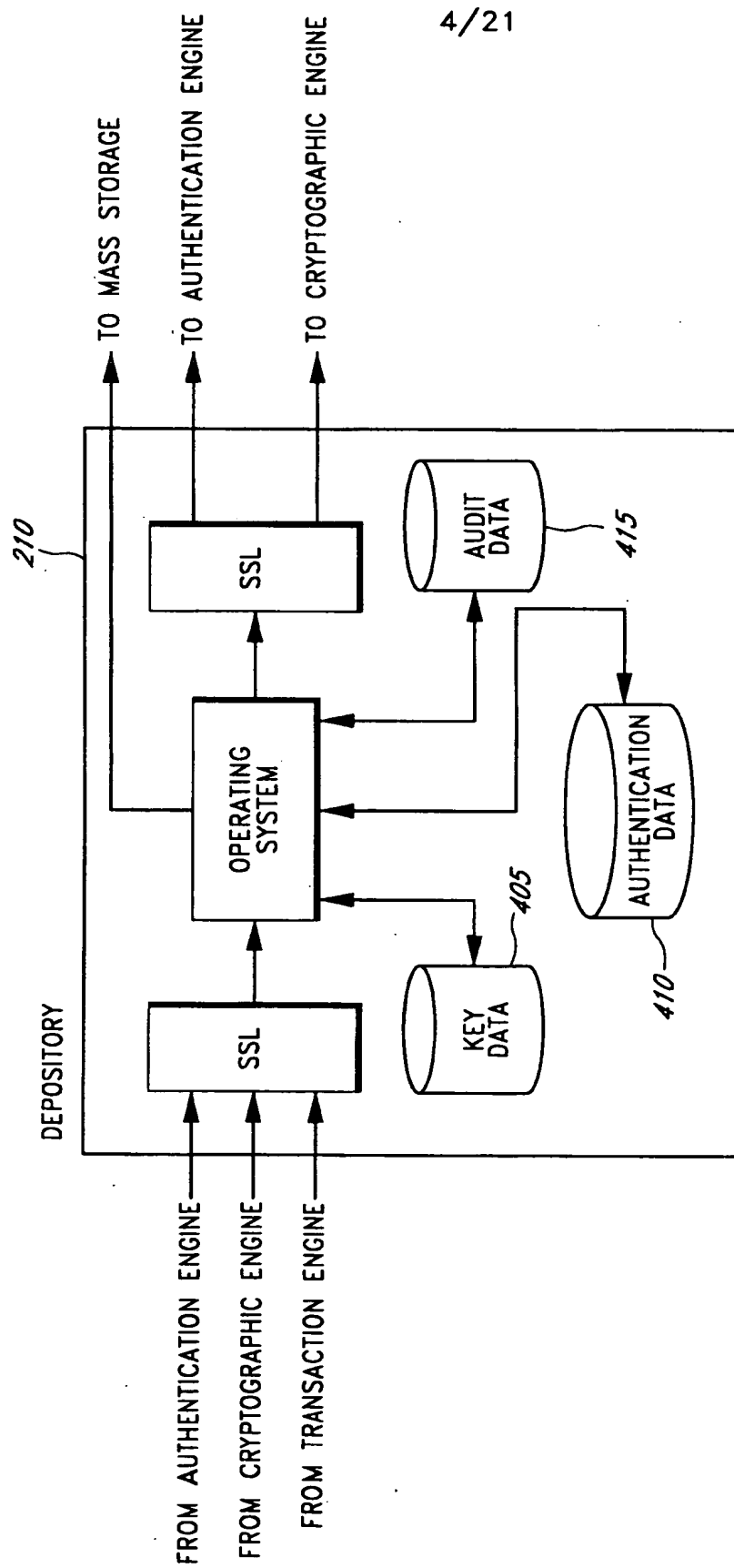


FIG. 3



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FIG. 4

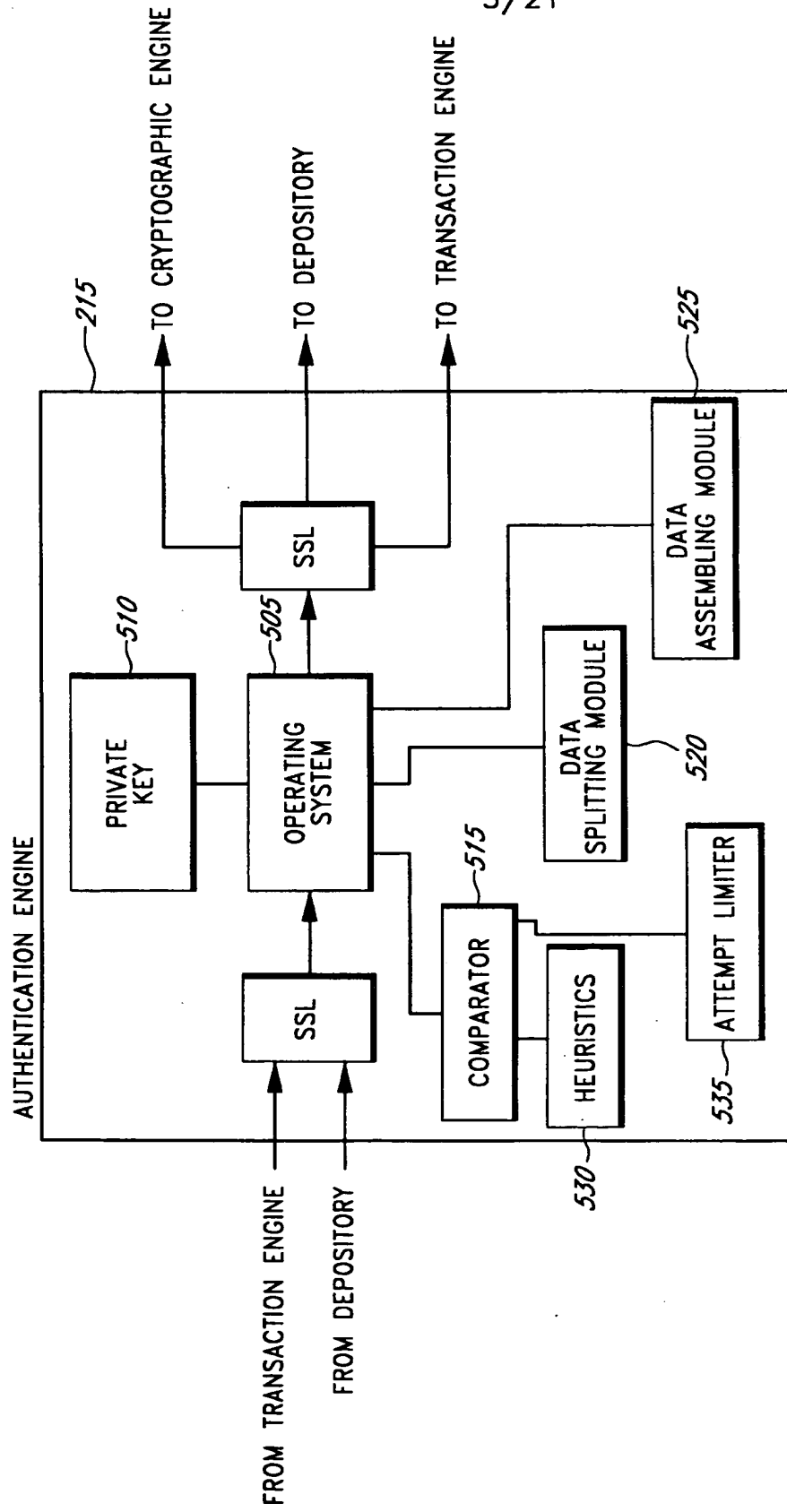
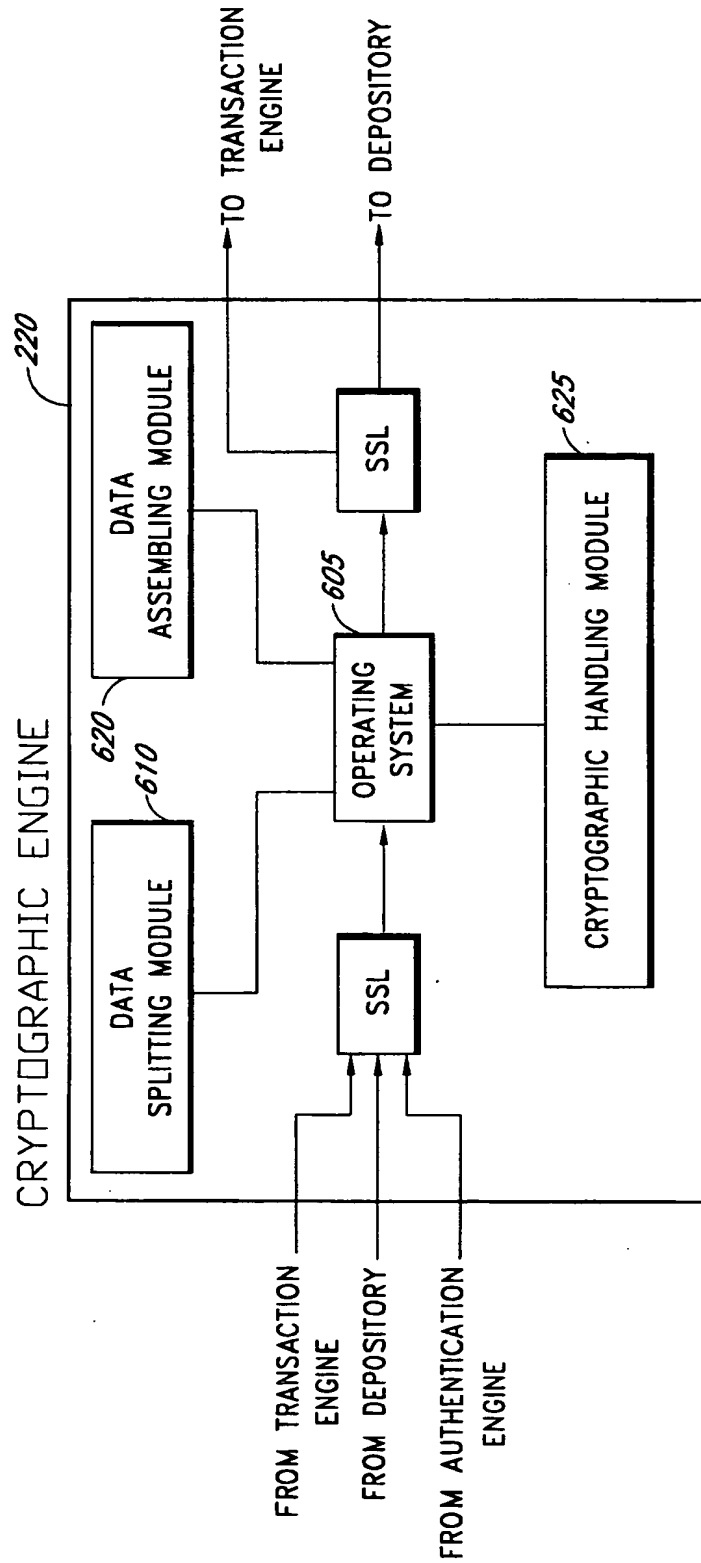


FIG. 5

**FIG. 6**

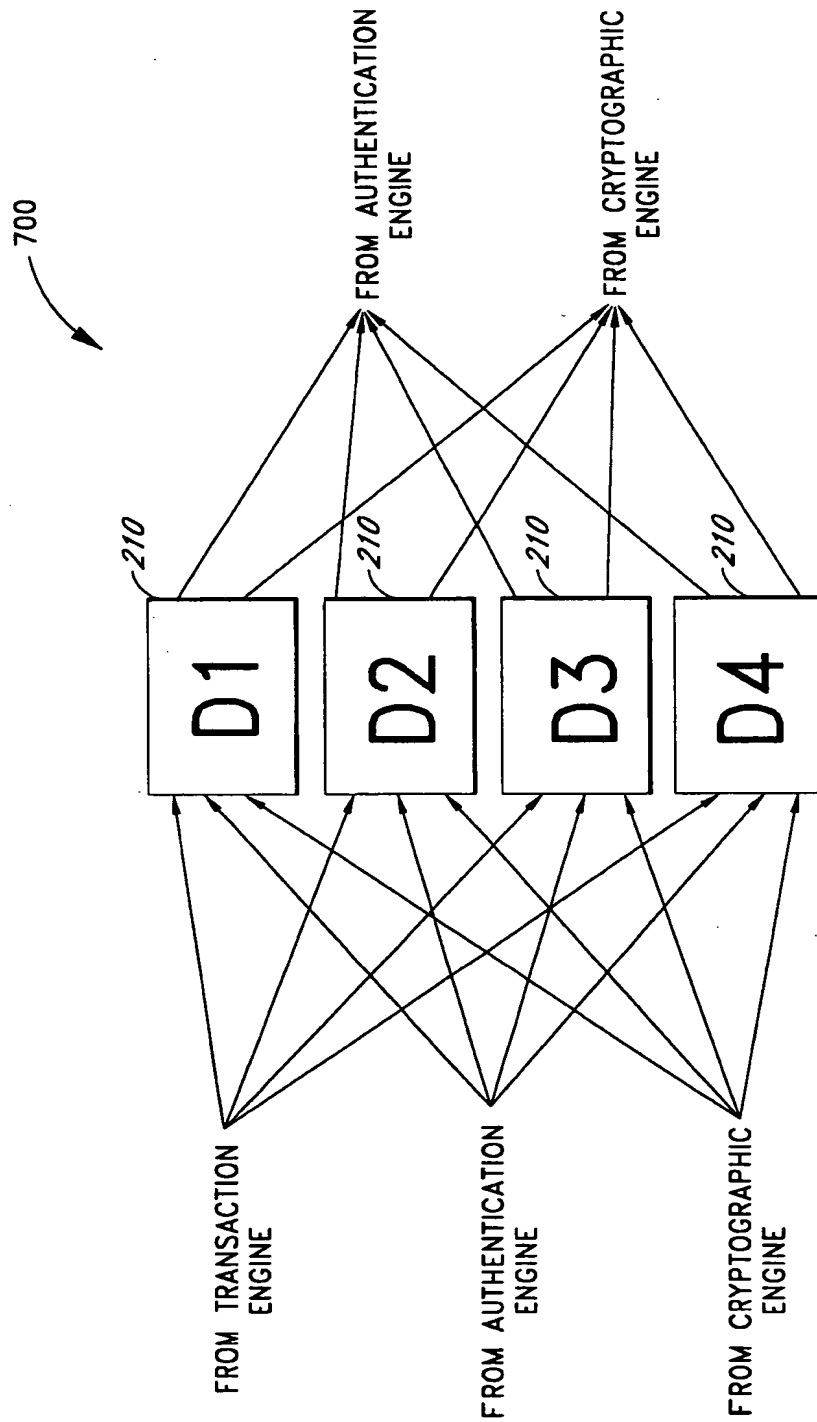
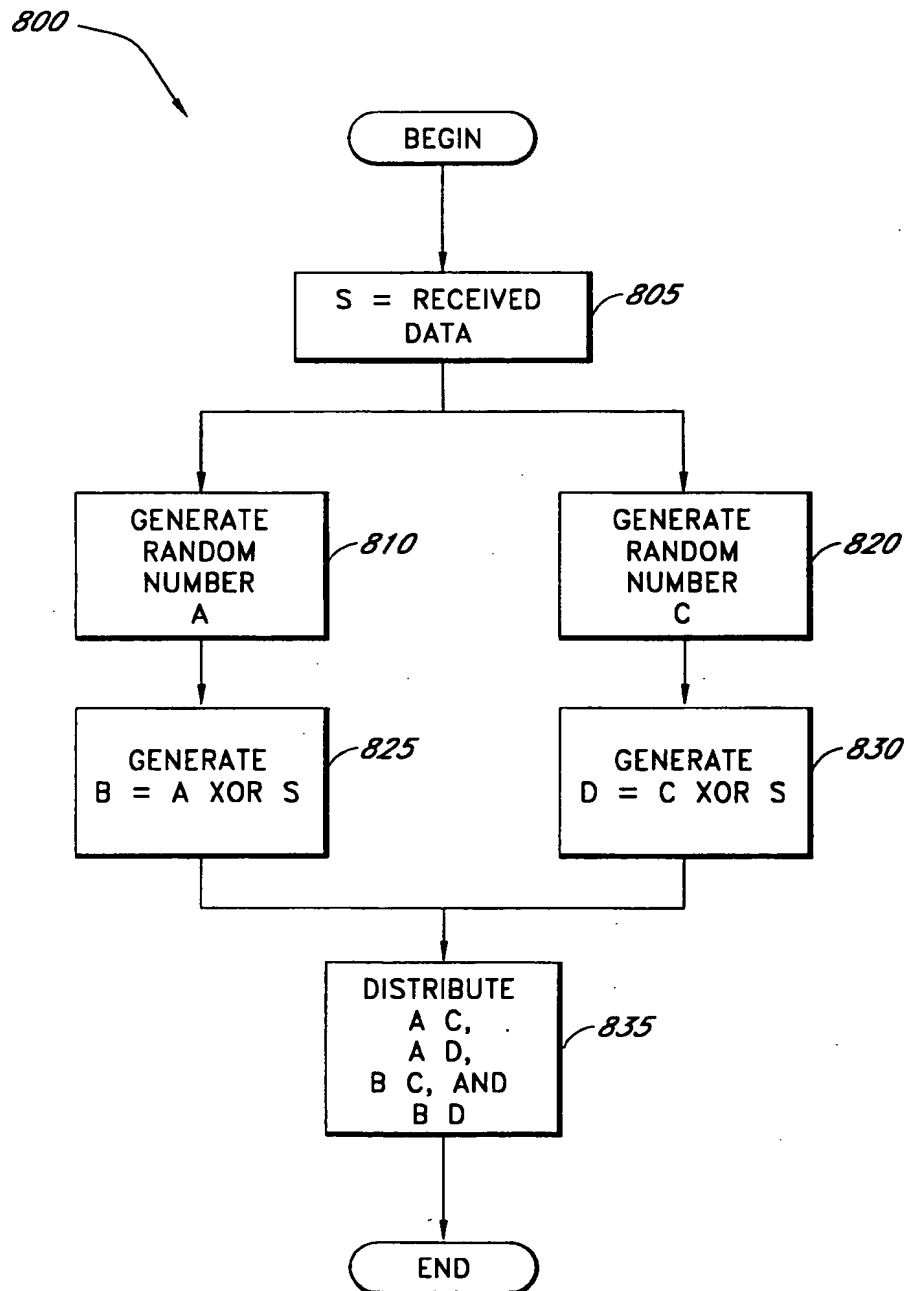
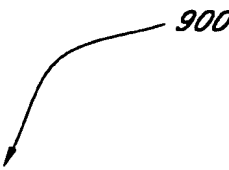


FIG. 7

**FIG. 8**

900



ENROLLMENT DATA FLOW			
SEND	RECEIVE	SSL	ACTION
905 USER	TRANSACTION ENGINE (TE)	1/2	TRANSMIT ENROLLMENT AUTHENTICATION DATA (B) AND THE USER ID (UID) ENCRYPTED WITH THE PUBLIC KEY OF THE AUTHENTICATION ENGINE (AE) AS (PUB_AE(UID,B))
915 TE	AE	FULL	FORWARD TRANSMISSION
920			AE DECRYPTS AND SPLITS FORWARDED DATA
925 AE	THE Xth DEPOSITORY (DX)	FULL	STORE RESPECTIVE PORTION OF DATA
WHEN DIGITAL CERTIFICATE REQUESTED			
930 AE	CRYPTOGRAPHIC ENGINE (CE)	FULL	REQUEST KEY GENERATION
935			CE GENERATES AND SPLITS KEY
945 CE	TE	FULL	TRANSMIT REQUEST FOR DIGITAL CERTIFICATE
950 TE	CERTIFICATION AUTHORITY (CA)	1/2	TRANSMIT REQUEST
955 CA	TE	1/2	TRANSMIT DIGITAL CERTIFICATE
960 TE	USER	1/2	TRANSMIT DIGITAL CERTIFICATE
TE	MS	FULL	STORE DIGITAL CERTIFICATE
965 TE	DX	FULL	STORE RESPECTIVE PORTION OF KEY

FIG. 9A

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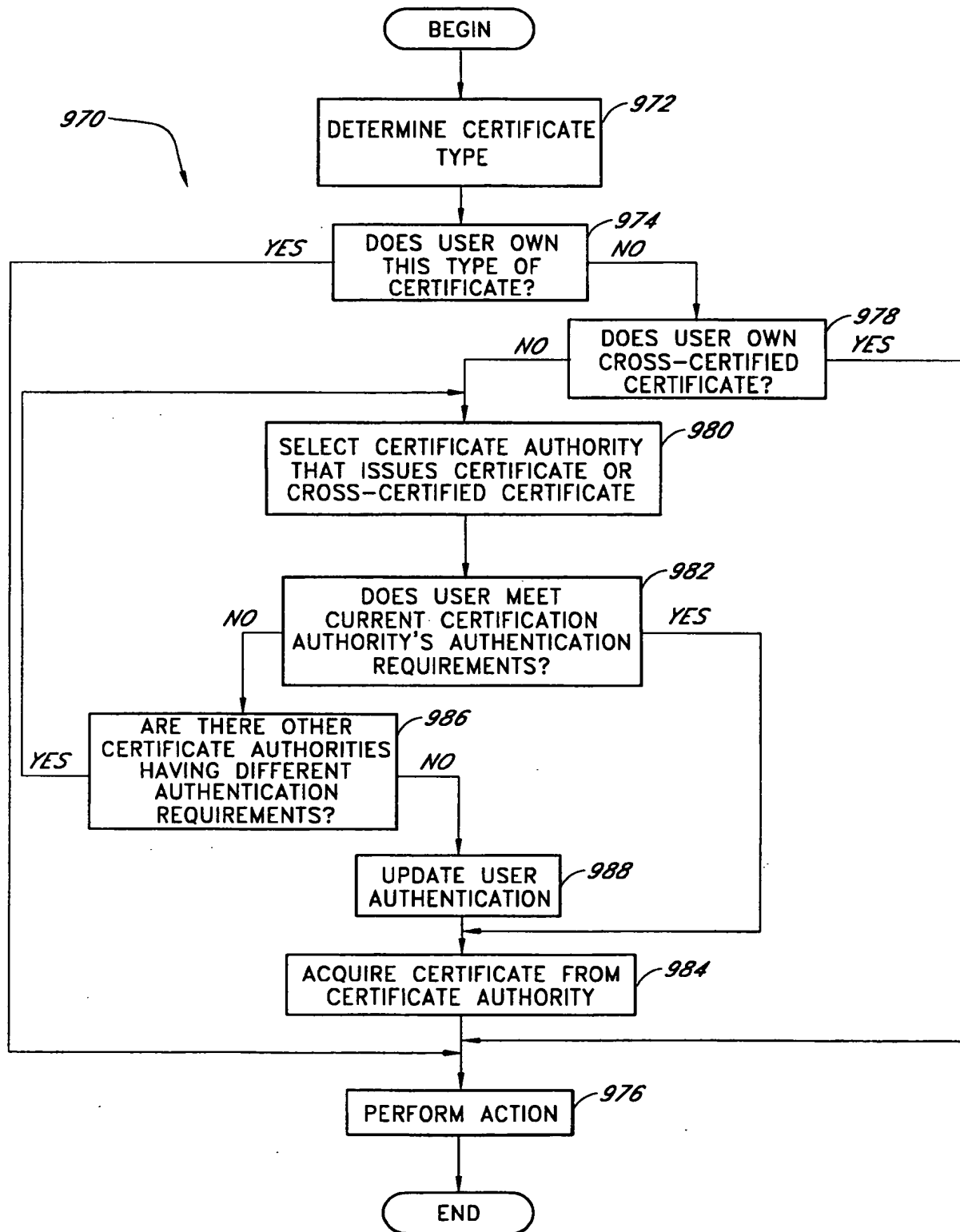


FIG. 9B

AUTHENTICATION DATA FLOW

	SEND	RECEIVE	SSL	ACTION
1005	USER	VENDOR	1/2	TRANSACTION OCCURS, SUCH AS SELECTING PURCHASE
1010	VENDOR	USER	1/2	TRANSMIT TRANSACTION ID (TID) AND AUTHENTICATION REQUEST (AR)
				AUTHENTICATION DATA (B') IS GATHERED FROM USER
1015	USER	TE	1/2	TRANSMIT TID AND B' WRAPPED IN THE PUBLIC KEY OF THE AUTHENTICATION ENGINE (AE), AS (PUB_AE(TID, B'))
1020	TE	AE	FULL	FORWARD TRANSMISSION
				ENROLLMENT AUTHENTICATION DATA (B) IS REQUESTED AND GATHERED
1025	VENDOR	TRANSACTION ENGINE (TE)	FULL	TRANSMITS TID, AR
1030	TE	MASS STORAGE(MS)	FULL	CREATE RECORD IN DATABASE
1035	TE	THE Xth DEPOSITORY(DX)	FULL	UID, TID
1040	DX	AE	FULL	TRANSMIT THE TID AND THE PORTION OF THE AUTHENTICATION DATA STORED AT ENROLLMENT (BX) AS (PUB_AE(TID, BX))
1045				AE ASSEMBLES B AND COMPARES TO B'
1050	AE	TE	FULL	TID, THE FILLED IN AR
	TE	VENDOR	FULL	TID, YES/NO
1055	TE	USER	1/2	TID, CONFIRMATION MESSAGE

FIG. 10

SIGNING DATA FLOW			
SEND	RECEIVE	SSL	ACTION
USER	VENDOR	1/2	TRANSACTION OCCURS, SUCH AS AGREEING ON A DEAL
VENDOR	USER	1/2	TRANSMIT TRANSACTION IDENTIFICATION NUMBER (TID), AUTHENTICATION REQUEST (AR), AND AGREEMENT OR MESSAGE (M)
			CURRENT AUTHENTICATION DATA (B') AND A HASH OF THE MESSAGE RECEIVED BY THE USER (h(M')) IS GATHERED FROM USER
USER	TE	1/2	TRANSMIT TID, B', AR, AND h(M') WRAPPED IN THE PUBLIC KEY OF THE AUTHENTICATION ENGINE (AE) AS (PUB_AE(TID, B', h(M')))
TE	AE	FULL	FORWARD TRANSMISSION
			GATHER ENROLLMENT AUTHENTICATION DATA
VENDOR	TRANSACTION ENGINE (TE)	FULL	TRANSMITS UID, TID, AR, AND A HASH OF THE MESSAGE (h(M)).
TE	MASS STORAGE (MS)	FULL	CREATE RECORD IN DATABASE
TE	THE Xth DEPOSITORY(DX)	FULL	UID, TID
DX	AE	FULL	TRANSMIT THE TID AND THE PORTION OF THE AUTHENTICATION DATA STORED AT ENROLLMENT (BX), AS (PUB_AE(TID, BX))
			THE ORIGINAL VENDOR MESSAGE IS TRANSMITTED TO THE AE
TE	AE	FULL	TRANSMIT h(M)
			AE ASSEMBLES B, COMPARES TO B' AND COMPARES h(M) TO h(M')
AE	CRYPTOGRAPHIC ENGINE (CE)	FULL	REQUEST FOR DIGITAL SIGNATURE AND A MESSAGE TO BE SIGNED, FOR EXAMPLE, THE HASHED MESSAGE
AE	DX	FULL	TID, SIGNING UID
DX	CE	FULL	TRANSMIT THE PORTION OF THE CRYPTOGRAPHIC KEY CORRESPONDING TO THE SIGNING PARTY
			CE ASSEMBLES KEY AND SIGNS
CE	AE	FULL	TRANSMIT THE DIGITAL SIGNATURE (S) OF SIGNING PARTY
AE	TE	FULL	TID, THE FILLED IN AR, h(M), AND S
TE	VENDOR	FULL	TID, A RECEIPT=(TID, YES/NO, AND S), AND THE DIGITAL SIGNATURE OF THE TRUST ENGINE, FOR EXAMPLE, A HASH OF THE RECEIPT ENCRYPTED WITH THE TRUST ENGINE'S PRIVATE KEY (Priv_TE(h(RECEIPT)))
TE	USER	1/2	TID, CONFIRMATION MESSAGE

FIG. 11

ENCRYPTION/DECRYPTION DATA FLOW			
SEND	RECEIVE	SSL	ACTION
DECRYPTION			
			PERFORM AUTHENTICATION DATA PROCESS 1000, INCLUDE THE SESSION KEY (SYNC) IN THE AR, WHERE THE SYNC HAS BEEN ENCRYPTED WITH THE PUBLIC KEY OF THE USER AS PUB_USER(SNYC)
			AUTHENTICATE THE USER
1205 AE	CE	FULL	FORWARD PUB_USER(SYNC) TO CE
1210 AE	DX	FULL	UID, TID
1215 DX	CE	FULL	TRANSMIT THE TID AND THE PORTION OF THE PRIVATE KEY AS (PUB_AE(TID, KEY_USER))
1220	CE ASSEMBLES THE CRYPTOGRAPHIC KEY AND DECRYPTS THE SYNC		
1225 CE	AE	FULL	TID, THE FILLED IN AR INCLUDING DECRYPTED SYNC
1230 AE	TE	FULL	FORWARD TO TE
TE	REQUESTING APP/VENDOR	1/2	TID, YES/NO, SYNC
ENCRYPTION			
1235 REQUESTING APP/VENDOR	TE	1/2	REQUEST FOR PUBLIC KEY OF USER
1240 TE	MS	FULL	REQUEST DIGITAL CERTIFICATE
1245 MS	TE	FULL	TRANSMIT DIGITAL CERTIFICATE
1250 TE	REQUESTING APP/VENDOR	1/2	TRANSMIT DIGITAL CERTIFICATE

FIG. 12

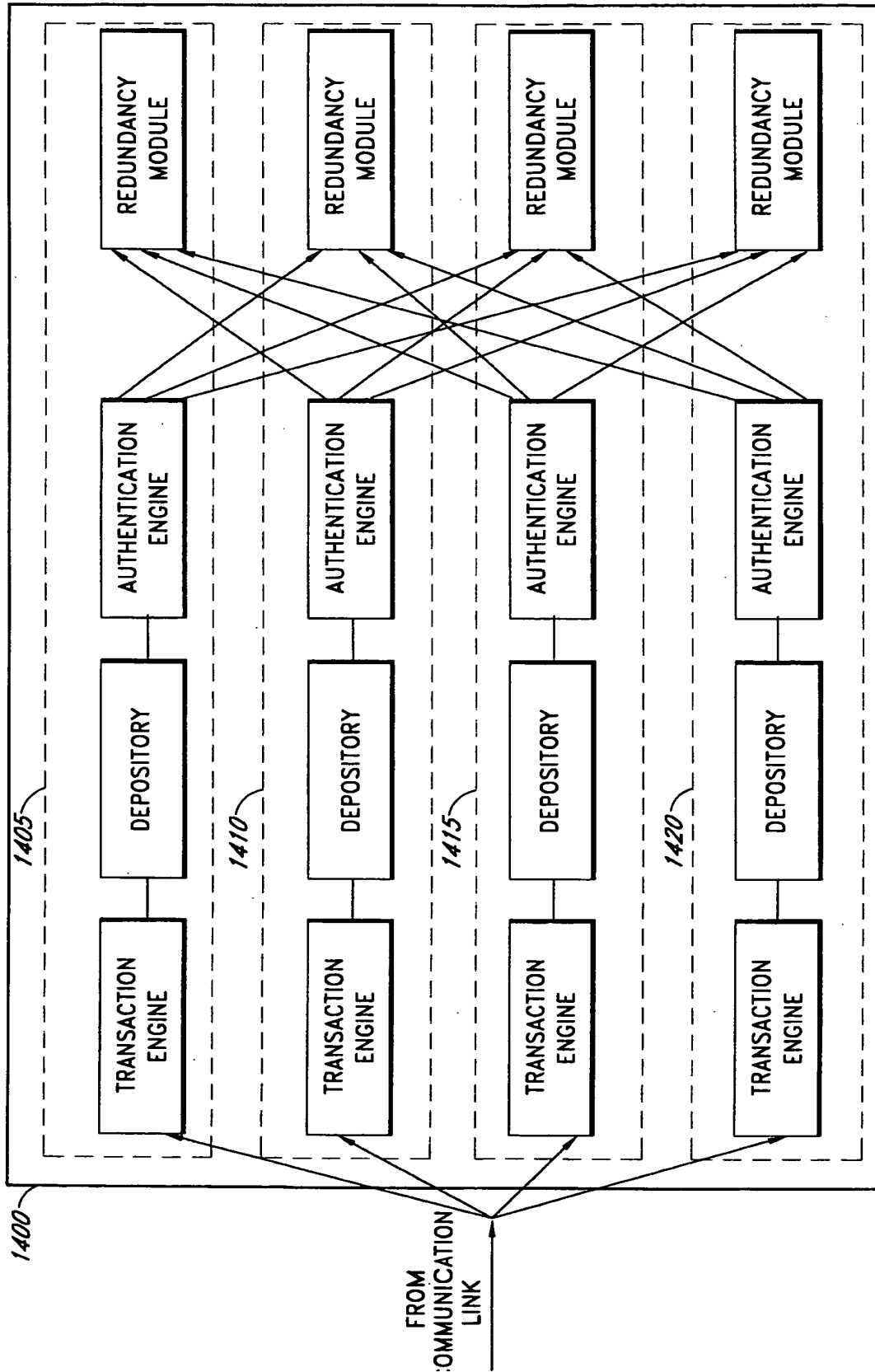


FIG. 14

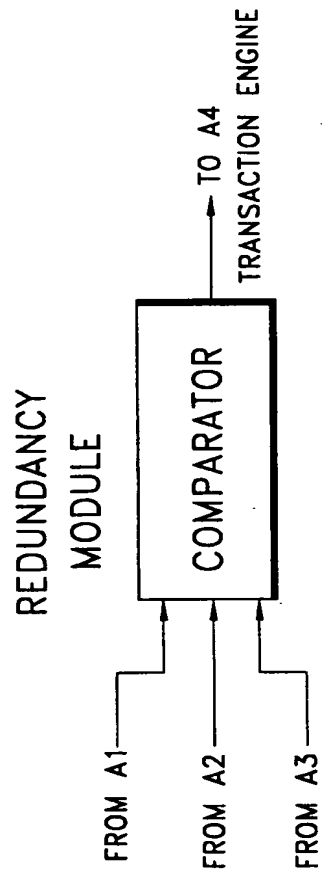
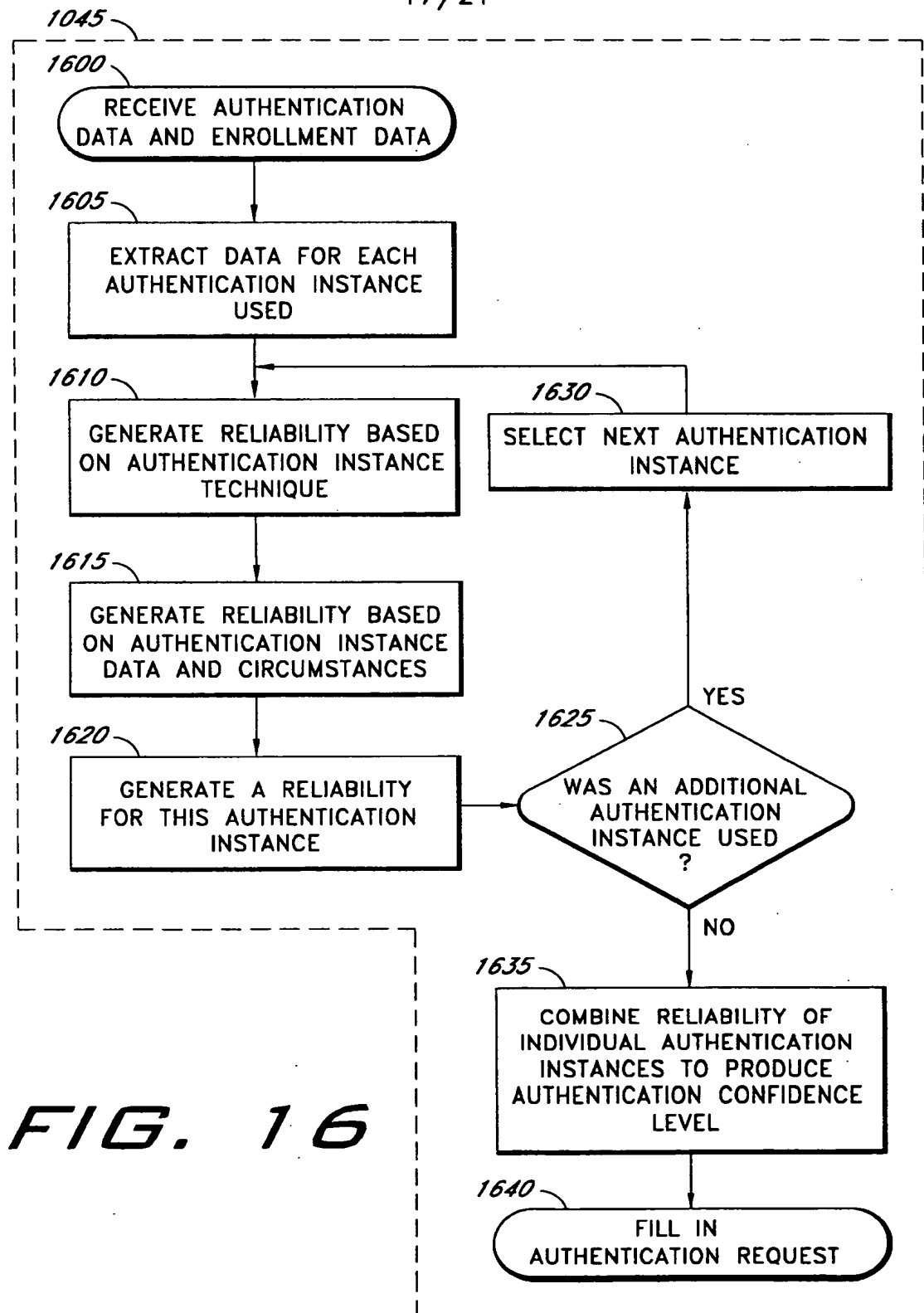
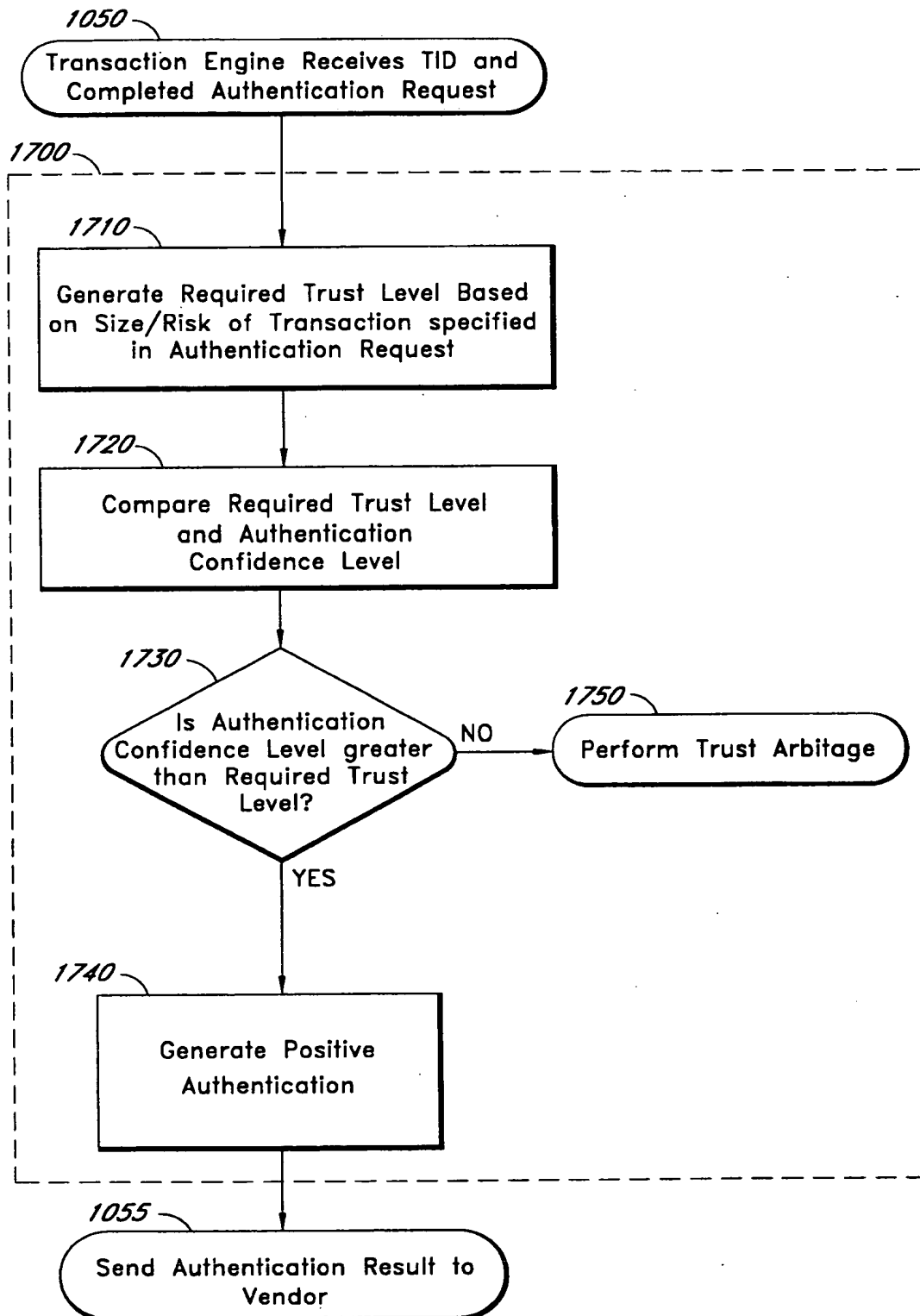
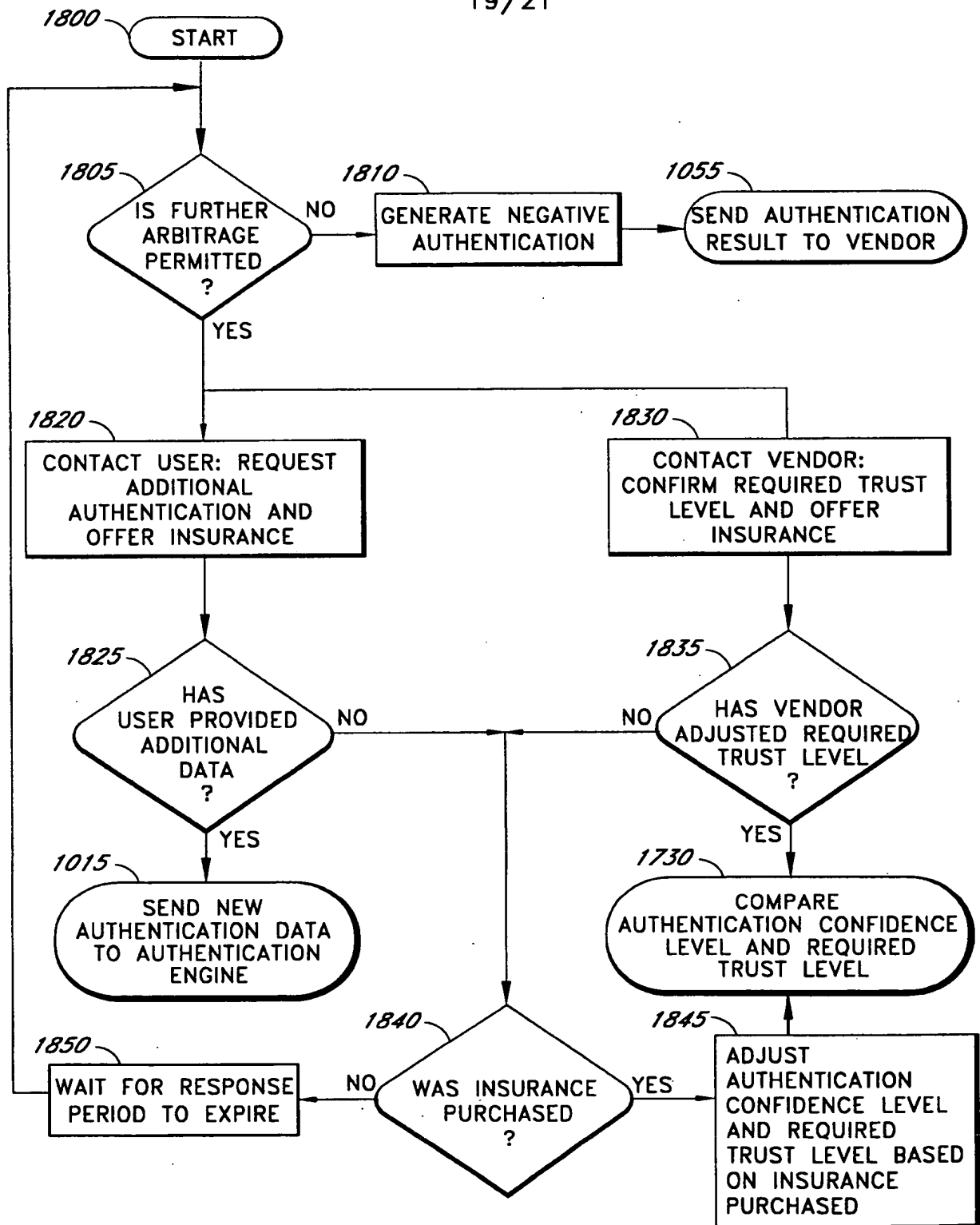


FIG. 15

**FIG. 16**

**FIG. 17**

**FIG. 18**

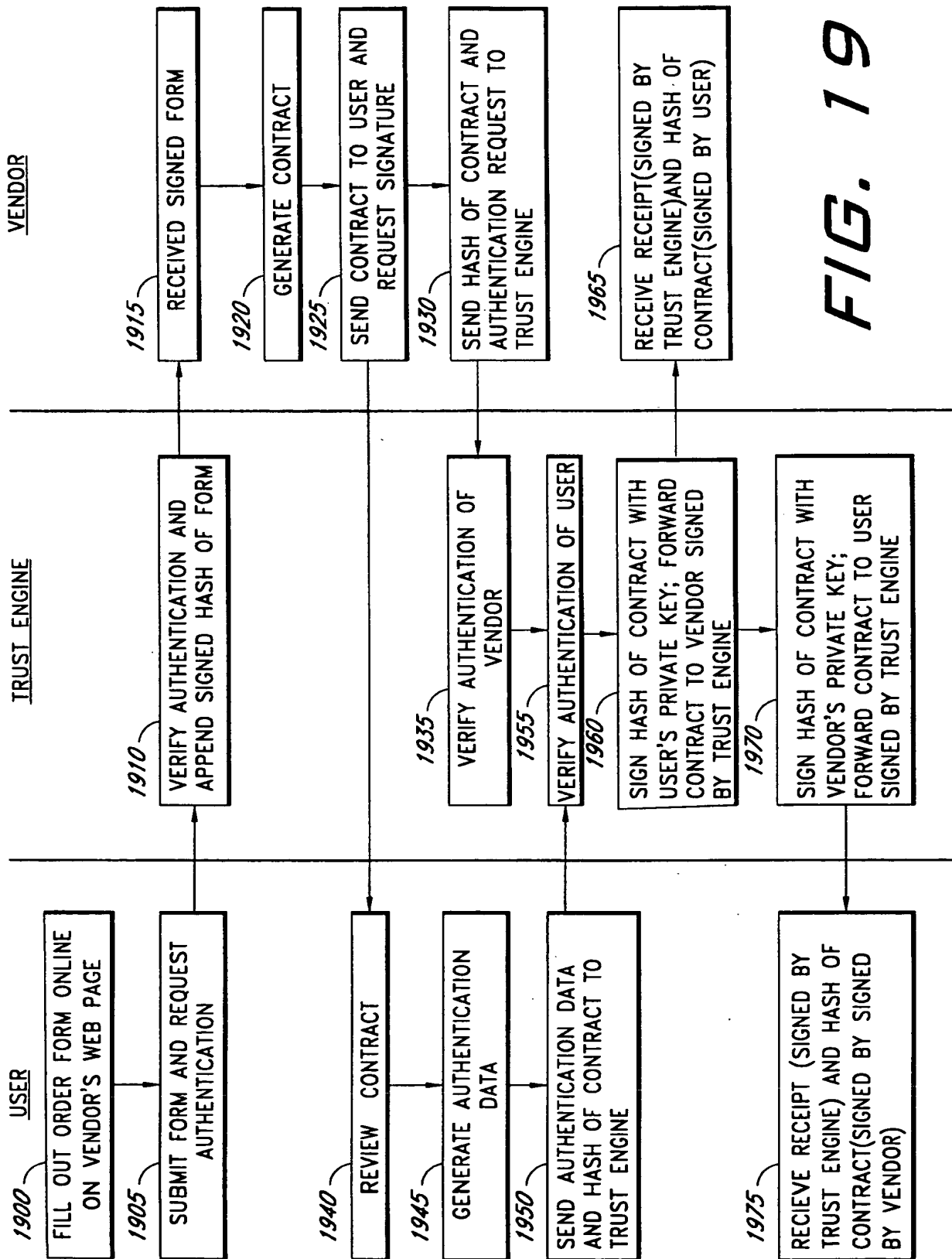
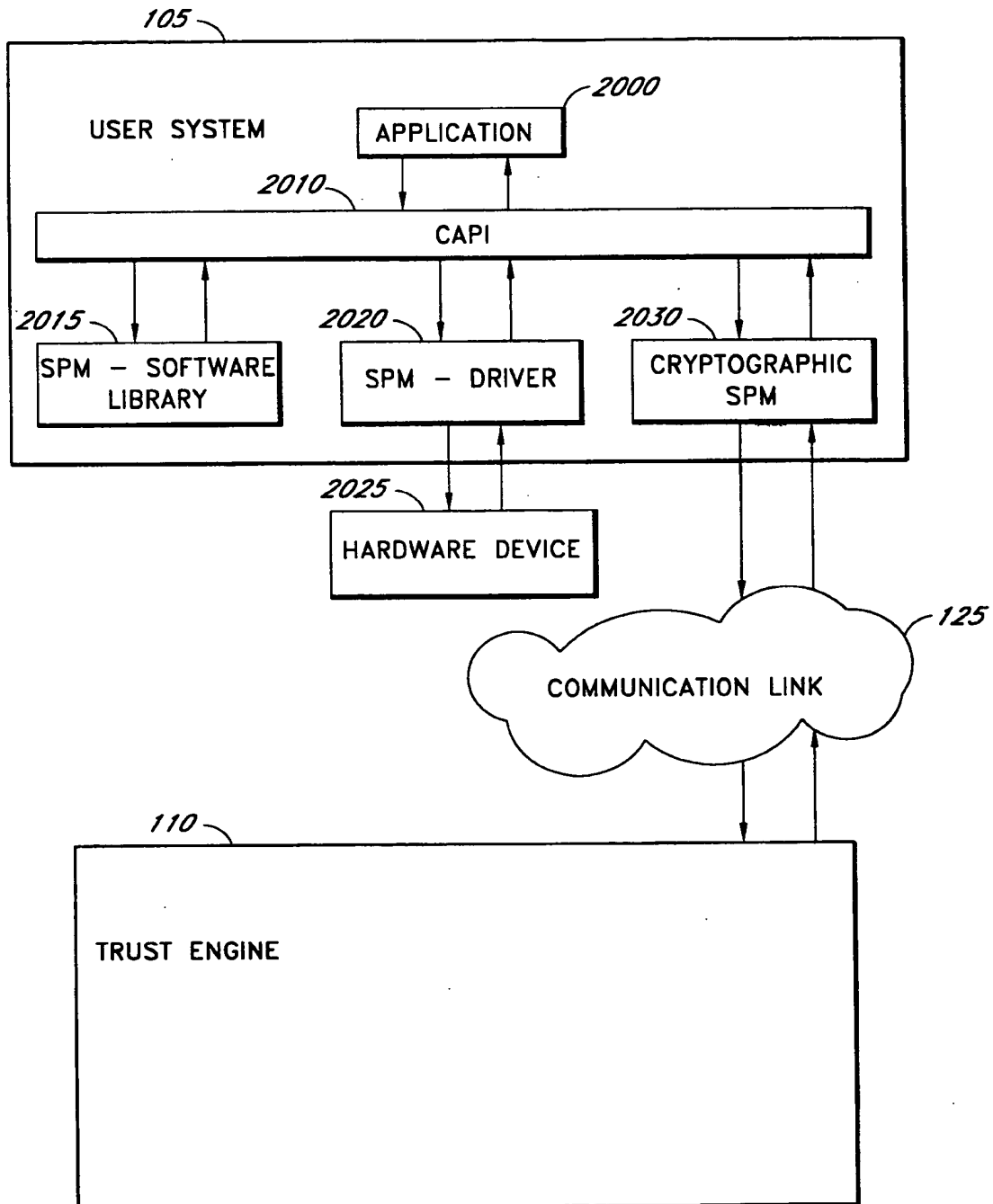


FIG. 19

**FIG. 20**